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e-brief

Give Canadian Workers the Tools to do the Job! Why Canada Needs More Robust Capital Investment

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When it comes to earning more and living better at less cost in time, effort, and environmental stress, there is nothing like new investment. Better plant and equipment makes workers more productive and fosters higher wages. New machines and structures incorporate new technology, raising productivity growth, lowering environmental stress, and making Canadian goods and services more competitive. International comparisons show clearly that countries with more capital per worker have higher incomes per worker.[1] In a world where raw labour often comes cheap, Canadians need to ensure that their businesses are equipping their workers with capital.

Sadly, however, the performance of most Canadian provinces, and of Canada as a whole, in fostering new capital formation is not impressive. This *e-brief* updates previous work by Robson and Goldfarb (2004, 2005 and 2006) that puts Canada's capital investment performance in an international context. The short message from this comparison is that Canada is not keeping up. The past decade has seen a declining trend in private-sector capital formation per worker in Canada compared to other OECD and G7 countries. The comparison with the US is even worse. And while extending the comparison to rising developing countries, such as Brazil, Russia, India and China, is complicated by their varying stages of development and data problems, the global picture underlines the extent to which other countries are pursuing improvements in living standards more aggressively than are Canadians.

Our comparison is straightforward. We use historical and forecast data on business capital formation and employment from the OECD, and comparable data

1 Sala-i-Martin (1997) shows the relationship between capital investment (equipment and non-equipment) and economic growth to be positive and robust. Our OECD data also shows evidence of the expected positive correlation between output per worker and capital stock per worker.

on Canada and the provinces from Statistics Canada.[2] We use purchasing-power-parity (PPP) exchange rates to allow Canadian-dollar comparisons of investment spending across countries, since market exchange rates typically do not offset differences in domestic price levels.[3]

Our key finding is that while the average Canadian worker will enjoy about C$11,000 in new capital investment in 2007, the average OECD worker will likely enjoy about $11,700. The average worker in the more exclusive club of G7 developed countries will see $12,300 of capital investment in 2007, and the average American worker some $13,300 (See Figure 1 as well as Table 1). Put another way, for every dollar invested in the average OECD worker in 2007, his or her Canadian counterpart will receive 94 cents. For every dollar invested in the average G7 worker, his or her Canadian counterpart will receive 90 cents. And for every dollar invested in a US worker, his or her Canadian counterpart will receive 82 cents.[4]

Relative underinvestment in Canada is not new, but what is disturbing is that after closing the gap with its developed-country counterparts in the late 1990s and early 2000s, Canada is falling behind again (Figure 1). Frustratingly, this adverse trend is evident despite the recent appreciation of the Canada-US exchange rate, which has lowered the relative price of machinery and equipment — much of which is imported — and might therefore have been expected to spur investment.

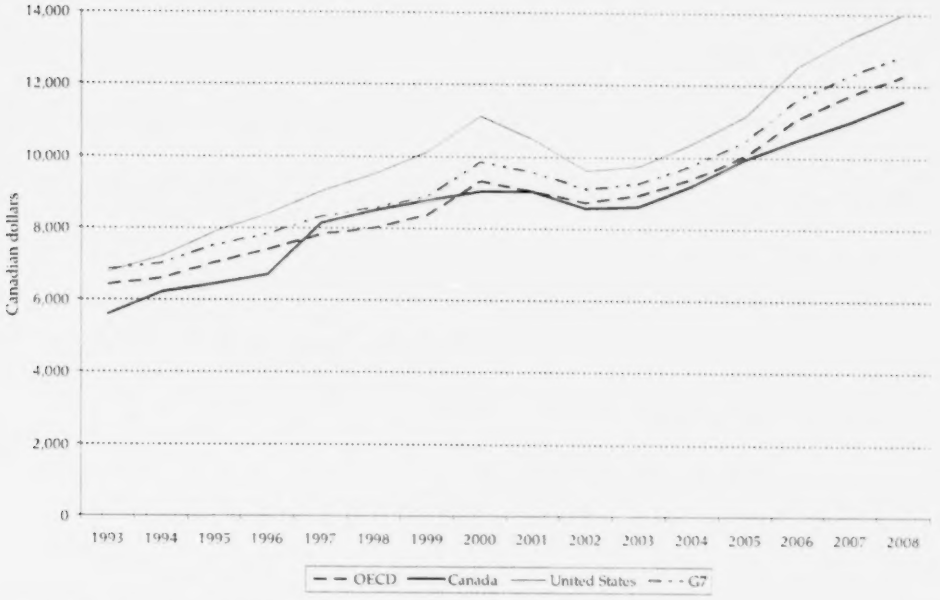
Since Canada's national performance is the sum of provincial experience, it is not surprising that, on average, Canada's provinces are doing poorly by international standards. Performance is not, however, uniformly bad across the country (Table 2 presents provincial investment relative to the US average). Businesses in Alberta invest more per worker than the average amount in the US or the OECD countries in our sample: an Albertan worker can expect to receive more than two dollars of investment for every dollar received by his or her US counterpart. (More than 60 percent of capital spending in Alberta is in the oil and gas sector, which illustrates the critical importance of a strong fossil fuels industry to this robust performance.) No other province beats the US figure. Saskatchewan comes in at 88 cents per dollar of US investment, its first significantly sub-US performance in more than a decade. And Newfoundland and Labrador comes in

2 We used data from a subset of 24 OECD countries for which business capital formation data were available from the *OECD Economic Outlook* and used total employment numbers. Provincial data are based on Statistics Canada CANSIM Tables 384-0002, 282-0002, 032-0002, 029-0005 and the authors' calculations. In order to extend the provincial economic accounts data (used for comparability to OECD numbers) to 2006 and 2007, we imputed a growth rate in capital formation from the Statistics Canada *Private and Public Investment in Canada, Intentions 2007* survey. An argument can be made for looking at net rather than gross investment. Different depreciation assumptions across countries and data availability would complicate that comparison, however, and since new technology may be embedded in replacement capital, we feel that gross investment merits attention in its own right.

3 Ideally, we would use capital-goods-specific PPP rates, but no such data exist. As long as movements in capital-goods prices among countries are not too different from movements in general prices, the comparison is still informative. We note, however, that swings in the Canadian currency may affect the bang for the investment buck Canadians enjoy, and that its recent appreciation has lowered the cost of imported capital goods.

4 Some health and education investment that is included in public-sector capital spending in Canada would appear under private-sector investment in the United States. A comparison of total public- and private-sector investment in the two countries seems to indicate that this does not, however, affect the qualitative conclusion of Canadian underinvestment.

Figure 1: *Private Non-Residential Gross Fixed Capital Formation per Worker*



Source: OECD, authors' calculations.

at 80 cents — a dramatic fall from last year when that province also topped the US figure.

The outlook is troubling for the largest provinces, Ontario, Quebec and British Columbia, which together account for 80 percent of Canadian manufacturing. All three provinces have slipped badly during the past five years. The average worker in Ontario and British Columbia received about 75 cents of investment per dollar in the US in 2002, but in 2007 will receive a mere 61 cents. The average worker in Quebec got 66 cents for every dollar per US worker five years ago, but this year will get only 56 cents. Table 1 presents the story for the remaining provinces with Manitoba at 68 cents, New Brunswick at 67 cents, Nova Scotia at 58 cents, and PEI at 47 cents of investment relative to a dollar spent in the US.

Expanding our comparisons to a world scale requires acknowledgement of the fact that lower-income countries such as China and India are likely to catch up to higher-income countries that are already operating closer to the frontier of technological efficiency and have less potential for rapid improvements. Right now, Brazil, Russia, India and China (BRIC) have ratios of capital investment per person that are a fraction of Canada's.[5] But the gap is closing fast. Investment per

5 Data for the BRIC countries are taken from the IMF's World Economic Outlook and IFS databases. We used total capital formation and total population for this comparison due to lack of detailed private capital investment and employment numbers. Measurement problems with the capital stock estimates and the PPP values may mean that investment in BRIC nations is understated, so comparisons of levels are subject to considerable uncertainty.

Table 1: *Investment per Worker for Provinces, Canada, OECD, G7 and the US, 1997–2007*

	Canadian dollars											Ratio to OECD average		Ratio to G7 average	
Province	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2006**	**2007**	**2006**	**2007**
Alberta	16,128	17,444	16,172	19,097	20,316	18,975	19,851	22,220	26,247	28,113	27,427	254	234	242	223
British Columbia	6,767	6,622	6,736	6,911	7,533	7,079	7,233	7,659	8,057	8,491	8,083	77	69	73	66
Manitoba	7,070	7,149	7,307	7,136	7,348	7,239	7,014	7,379	7,861	8,648	9,120	78	78	75	74
New Brunswick	4,814	6,250	8,175	7,980	6,098	5,873	6,692	7,029	7,709	7,794	8,895	70	76	67	72
Nfld and Labrador	10,860	10,442	13,582	11,843	10,942	10,063	11,578	13,962	14,157	12,889	10,716	117	91	111	87
Nova Scotia	6,704	7,923	9,847	7,798	8,006	8,215	7,377	6,961	7,434	7,992	7,786	72	66	69	63
Ontario	7,424	7,742	8,084	7,968	7,738	7,367	7,139	7,314	7,685	8,022	8,127	73	69	69	66
PEI	3,895	4,463	5,399	5,263	5,110	4,992	5,098	5,695	5,674	5,758	6,214	52	53	50	51
Quebec	5,915	6,412	6,942	7,107	6,547	6,316	6,412	7,021	7,014	7,057	7,439	64	63	61	61
Saskatchewan	13,689	11,671	11,813	11,873	11,729	10,681	11,361	11,178	11,789	12,499	11,674	113	100	108	95
Canada	8,115	8,493	8,767	9,020	9,023	8,552	8,608	9,205	9,939	10,469	10,981	95	94	90	89
OECD	7,808	7,987	8,345	9,289	9,031	8,709	8,920	9,385	10,009	11,063	11,727	100	100	95	96
G7	8,301	8,549	8,859	9,844	9,557	9,083	9,239	9,752	10,431	11,600	12,276	105	105	100	100
US	9,015	9,504	10,114	11,105	10,471	9,601	9,731	10,370	11,146	12,506	13,328	113	114	108	109

Source: OECD, Statistics Canada, authors' calculations.

Table 2: *Private Non-Residential Gross Capital Formation Per Worker, US =100*

Province	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Alberta	178.9	183.5	159.9	172.0	194.0	197.6	204.0	214.3	235.5	224.8	205.8
British Columbia	75.1	69.7	66.6	62.2	71.9	73.7	74.3	73.9	72.3	67.9	60.6
Manitoba	78.4	75.2	72.2	64.3	70.2	75.4	72.1	71.2	70.5	69.2	68.4
New Brunswick	53.4	65.8	80.8	71.9	58.2	61.2	68.8	67.8	69.2	62.3	66.7
Nfld and Labrador	120.5	109.9	134.3	106.7	104.5	104.8	119.0	134.6	127.0	103.1	80.4
Nova Scotia	74.4	83.4	97.4	70.2	76.5	85.6	75.8	67.1	66.7	63.9	58.4
Ontario	82.3	81.5	79.9	71.8	73.9	76.7	73.4	70.5	68.9	64.1	61.0
PEI	43.2	47.0	53.4	47.4	48.8	52.0	52.4	54.9	50.9	46.0	46.6
Quebec	65.6	67.5	68.6	64.0	62.5	65.8	65.9	67.7	62.9	56.4	55.8
Saskatchewan	151.9	122.8	116.8	106.9	112.0	111.2	116.7	107.8	105.8	99.9	87.6
Canada	90.0	89.4	86.7	81.2	86.2	89.1	88.5	88.8	89.2	83.7	82.4
G7	92.1	89.9	87.6	88.6	91.3	94.6	94.9	94.0	93.6	92.8	92.1
OECD	86.6	84.0	82.5	83.6	86.2	90.7	91.7	90.5	89.8	88.5	88.0

Source: OECD, Statistics Canada, authors' calculations.

person in the BRIC countries has gone from 16 percent to more than 30 percent of Canada's figure in the last 15 years. These countries are seeking to attract ever more of the world's investable savings to build increasingly sophisticated domestic capital stocks — which, in turn, will allow them to make increasingly sophisticated goods and services, and support higher living standards for their citizens. While Canadians should wish these countries well in their efforts, Canadians should also realize that their own place in the forefront of the world's societies depends on their own ability to attract investment. Canada is becoming a relatively smaller fish in a fast-growing pond. Canadians need to learn to swim faster in this more competitive environment.

During the last decade, the low value of the Canadian dollar was blamed for under-investment due to the expense of importing foreign capital goods. Yet the strengthening of the Canadian dollar does not seem to have prompted a resurgence. What might Canadians do in the face of this disappointment?

One place to look is at high taxes on capital formation in Canada. The country has some of the highest rates of capital taxation in the world (Mintz et al. 2005). Governments need to continue to reform and rationalize their corporate, capital, and sales tax codes to ensure that investments can receive internationally competitive returns.

Another place to look is regulation. Some of the sectors likeliest to yield innovations, competitive products, and rising wages in the years ahead — such as telecommunications, financial services, and healthcare — struggle under regulatory regimes shaped by the economic and political imperatives of the past. Other key supports for the economy, such as transportation infrastructure and the production and transmission of fossil fuels and electric power, are not subject to market pricing and/or have restricted access to funds for investment.

Canada is blessed with high amounts of human capital, deep and efficient capital markets, relatively large amounts of infrastructure, and access to the US market that is almost entirely free of trade barriers. In the long run, translating these advantages into higher standards of living in Canada depends on increasing the productivity of Canadian industry. The higher incomes, faster productivity

growth, and lower environmental stresses that new capital permits are especially desirable in the face of Canada's changing demography, which threatens to hold back growth of the workforce while putting fresh demands on public programs. So tax and regulatory reform that would make Canada's investment climate more favourable, and thus equip Canadian workers with better tools, is an essential task for federal and provincial governments.

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